AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A light-emitting device, comprising:

a multi-layer stack of materials including a light-generating region, and a first layer that is n-doped and supported by the light-generating region, the first layer including a top surface and a bottom surface opposite the top surface, the top surface being further away from the light-generating region than the bottom surface, [[a]] the top surface of the first layer being configured so that light generated by the light-generating region can emerge from the light-emitting device via the top surface of the first layer, the first layer having a thickness of less than 10 microns; and

a material comprising gas in contact with the top surface of the first layer, the material having an index of refraction less than 1.3,

wherein the light emitting device is packaged.

2. (Currently Amended) The light-emitting device of claim 1, wherein the top surface of the first layer has a dielectric function that varies spatially according to a pattern.

3. (Currently Amended) The light-emitting device of claim 1, wherein the top surface of the first layer has holes with a size of less than $\lambda/5$, where λ is a wavelength of light that can be emitted by the first layer.

4. (Previously Presented) The light-emitting device of claim 1, wherein the light-emitting device is in the form of a packaged die.

5. (Cancelled)

6. (Previously presented) The light-emitting device of claim 1, wherein the gas comprises air.

7. (Previously presented) The light-emitting device of claim 1, wherein a pressure of the gas is less than 100 Torr.

8. (Previously presented) The light-emitting device of claim 1, wherein the material has an index of refraction of at least one.

9. (Previously Presented) The light-emitting device of claim 1, wherein the packaged light-emitting device is free of an encapsulant material.

10. (Currently Amended) The light-emitting device of claim 1, further comprising a cover, the material having an index of refraction of less than 1.3 being between the cover and the top surface of the first layer.

11. (Previously Presented) The light-emitting device of claim 10, wherein the cover comprises a phosphor material.

12. (Currently Amended) The light-emitting device of claim 11, wherein the cover is configured so that light generated by the light-generating region that emerges via the top surface of the first layer can interact with the phosphor material, and so that light that emerges via the top surface of the first layer and interacts with the phosphor material emerges from the cover as substantially white light.

13. (Currently Amended) The light-emitting device of claim 1, further comprising:

a first sheet comprising a material that is substantially transparent to light that emerges from the light-emitting device; and

a second sheet comprising a phosphor material, the second sheet being adjacent the first sheet,

wherein the material having an index of refraction of less than 1.3 is between the first sheet and the top surface of the first layer.

14. (Currently Amended) The light-emitting device of claim 13, the first and second sheets being configured so that light generated by the light-generating region that emerges via the top surface of the first layer can interact with the phosphor material, and so that light that emerges via

the top surface of the first layer and interacts with the phosphor material emerges from the second sheet as substantially white light.

15. (Previously Presented) The light-emitting device of claim 1, further comprising a support that supports the multi-layer stack of materials.

16. (Previously presented) The light-emitting device of claim 15, further comprising a layer of reflective material that is capable of reflecting at least 50% of light generated by the light-generating region that impinges on the layer of reflective material, the layer of reflective material being between the support and the multi-layer stack of materials.

17. (Previously Presented) The light-emitting device of claim 16, wherein the reflective material is a heat sink material.

18. (Previously Presented) The light-emitting device of claim 17, wherein the heat sink material is configured so that the heat sink material has a vertical heat gradient during use of the light-emitting device.

19. (Previously Presented) The light-emitting device of claim 16, further comprising a heat sink material disposed adjacent the support.

20. (Previously Presented) The light-emitting device of claim 19, wherein the heat sink material is configured so that the heat sink material has a vertical heat gradient during use of the light-emitting device.

21. (Previously Presented) The light-emitting device of claim 1, further including a current-spreading layer between the first layer and the light-generating region.

22. (Previously Presented) The light-emitting device of claim 1, further comprising electrical contacts configured to inject current into the light-emitting device.

23. (Previously Presented) The light-emitting device of claim 22, wherein the electrical contacts are configured to vertically inject electrical current into the light-emitting device.

24. (Previously Presented) The light-emitting device of claim 1, wherein the light-emitting device is selected from the group consisting of light-emitting diodes, lasers, optical amplifiers, and combinations thereof.

25. (Previously Presented) The light-emitting device of claim 1, wherein the light-emitting device comprises a light emitting diode.

26. (Previously Presented) The light-emitting device of claim 1, wherein the light-emitting device is selected from the group consisting of OLEDs, flat surface-emitting LEDs, HBLEDs, and combinations thereof.

27. (Currently Amended) The light-emitting device of claim 1, wherein the top surface of the first layer has a dielectric function that varies spatially according to a pattern with an ideal lattice constant and a detuning parameter with a value greater than zero.

28. (Currently Amended) The light-emitting device of claim 1, wherein the top surface of the first layer has a dielectric function that varies spatially according to a pattern, and the pattern does not extend into the light-generating region.

29. (Currently Amended) The light-emitting device of claim 1, wherein the top surface of the first layer has a dielectric function that varies spatially according to a pattern, and the pattern does not extend beyond the first layer.

30. (Currently Amended) The light-emitting device of claim 1, wherein the top surface of the first layer has a dielectric function that varies spatially according to a pattern, and the pattern extends beyond the first layer.

31. (Previously presented) The light-emitting device of claim 1, further comprising a layer of reflective material that is capable of reflecting at least 50% of light generated by the light-generating region that impinges on the layer of reflective material,

wherein the light-generating region is between the layer of reflective material and the first layer.

32. (Cancelled)

33. (Currently Amended) The light-emitting device of claim 1, wherein the top surface of the first layer has a dielectric function that varies spatially according to a nonperiodic pattern.

34. (Currently Amended) The light-emitting device of claim 1, wherein the top surface of the first layer has a dielectric function that varies spatially according to a complex periodic pattern.

35. (Cancelled)

36. (Previously presented) The light-emitting device of claim 1, wherein the first layer is formed directly on the light-generating region.

37. (Cancelled)

38. (Previously presented) The light-emitting device of claim 1, wherein the material has an index of refraction of less than 1.2.

39. (Currently Amended) The light-emitting device of claim 1, wherein the top surface of the first layer is roughened.

40. (New) The light-emitting device of claim 1, wherein at least about 50% of the total amount of light generated by the light-generating region emerges from the light-emitting device via the top surface of the first layer.

41. (New) The light-emitting device of claim 1, wherein at least about 90% of the total amount of light generated by the light-generating region emerges from the light-emitting device via the top surface of the first layer.